

Investigation of the temperature fields in the roots of the working blades of turbines using electrical models. (Cont.) 96-7-4/25

conducting adhesive. The conductivity of gaps and the additional thermal resistance of contacting surfaces are represented by further strips of conducting paper. The model is connected to the integrator and equipotential lines are found with a probe. These lines correspond to isotherms. The thermal resistance of the root is readily determined.

The coefficient/heat transfer from the gas to the working surfaces of the blade may be determined by one of the published methods. Ten equations were compared and were found to agree within $\pm 25\%$. The heat that passes through the root is removed by air in contact with the lateral surfaces of the disc and so the disc may be replaced by an equivalent resistance.

The blade roots tested were typical of those used in practice including double and single mushroom-shaped (of the Kharkov Turbine Works (XT3) design) and fir tree-shaped (of the Neva Works (Nevskogo Zavod) design) and also fir tree-shaped with free fitting blades from

Card 4/8

Investigation of the temperature fields in the roots of the working blades of turbines using electrical models. (Cont.)

56-7-4/25

six aviation gas turbine engines of Soviet production.

In each case the total thermal resistance and the temperature field of the root was determined. In addition separate series of tests were made to elucidate the physical nature of heat exchange processes in the region of the roots. Some of the test results in the form of charts of relative equipotential lines are given in Figs. 2, 3 and 4. In order to check the accuracy of modelling determinations were first made of the temperature fields of roots in direct thermal experiments. Fig. 2 shows dimensionless equipotential lines in the root of the working blade of a turbine together with isotherms. The thermal test results lie between the electric model results using the two limiting assumptions in preparation of the model. The tests that have been done show that for the majority of blade roots the thermal resistance on the contacting planes is very small (for circumferential speeds of the order of 300 metres/sec the thermal resistance of contact

Card 5/8

Investigation of the temperature fields in the roots of the working blades of turbines using electrical models. (Cont.)

96-7-4/25

does not exceed $0.0001 \text{ m}^2/\text{hr.}^\circ\text{C/kcal}$) and has practically no influence on the temperature distribution in the zone of the roots. This considerably simplifies the conduct of the experiments.

Until now the mechanism of heat exchange near blade roots of fir tree shape has remained unexplained. We had supposed that most of the heat is transmitted through the erection gaps. However, special tests made on the electrical model showed that when the resistance of the erection gaps was increased to infinity the temperature field was hardly changed. This showed that the main part of the heat is transmitted through the contacting surfaces and the tensile forces on the blade have no influence because with a compression of about 40 kg/cm^2 (the minimum obtained in the previous work) the heat transfer coefficient at contact exceeds $5\,000 \text{ kcal/m}^2\text{-hrs.}^\circ\text{C}$. This result is illustrated in Fig. 4.

Card 6/8

Hence it may be concluded that the additional thermal resistance of fir tree-shaped blade roots is

Investigation of the temperature fields in the roots of the working blades of turbines using electrical models. (Cont.) 96-7-4/25

mainly due to increase in the length of the path through which heat passes and the contraction (or expansion) of the flow lines with sudden change in the area of the conductor.

The electro-modelling procedure was used to determine the actual thermal resistance of some typical blade root designs and the results are given in Table 2.

It is concluded that if axial heat leakage may be neglected the temperature fields in the zone of the blade roots may be determined by means of electrical paper models. The method is simple and the results are in good agreement with those of thermal experiment. The procedure can also be used to study the influence of such factors as the rate of supply or removal of heat, the type of joint, or the operating conditions on the temperature field of the disc.

When axial leakage of heat in the zone of the roots cannot be neglected, data obtained from an electrical model for the radial thermal resistance makes it

Card 7/8

Investigation of the temperature fields in the roots of the working blades of turbines using electrical models. (Cont.) 95-7-4/25

possible to replace the region of the root joint by a ring of equivalent resistance and dimensions. The method described by Knörschild may then be used to determine the temperature field of a disc of this kind. There are 5 figures, 2 tables and 8 references, 6 of which are Slavic.

ASSOCIATION: Institute of Thermal Engineering of the Ac.Sc. of the Ukrainian SSSR. (Institut Teploenergetiki AN USSR)

AVAILABLE:

Card 8/8

GERASHCHENKO, O. A.

AUTHORS: Gerashchenko, O. A., Nazarchuk, K. M. 57-12-19/19

TITLE: On the Consideration of Moistening in Solving Hydrodynamic Problems
(Ob uchete smashivayemosti poverkhnosti pri reshenii zadach gidrodinamiki).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1957, Vol. 27, Nr 12, pp. 2797-2798 (USSR)

ABSTRACT: Special experimental measurements of water flow in tubes wetted and covered with paraffine were conducted. The experimental error was less than $\pm 0.1\%$. The experiments, which were easily reproducible showed no noticeable influence of the wetting. The "adhesion" of liquids without adhesiveness at solid surfaces may be explained in the following way: If it is assumed, that sliding occurs at the interface, this sliding must follow the ordinary law of sliding friction: $F=fN$, F denoting the force of friction, f the friction coefficient and N the pressure normal to the surface. Here, in the case of the investigation of one single surface, this pressure is understood to be the quantity of the absolute hydrostatical pressure. The value of the friction coefficient between the liquid and a not wetted

Card 1/3

On the Consideration of Moistening in Solving Hydrodynamic Problems

57-12-19/19

body was never determined up to now. If in this case, however, friction is considered to be of the dry friction type, the order of magnitude of f may be evaluated starting from the known data for solids. It is to keep within the values 0.1 and 1.0. It can be shown, that on normal conditions, at atmospheric pressures and not too far above, ($p \gg 10^4 \text{ kg/m}^2$) a sliding can occur only at tangential hydrodynamic stresses above 100 - 1000 kg/m^2 . Stresses of such magnitude could be obtained for example in the case of water ($\mu = 10^{-4} \text{ kg.sec/m}^2$ at 20°C) only with exceptionally great gradients of velocity at the walls of the order of magnitude of $10^6 - 10^7 \text{ l/sec}$, which, of course, is practically impossible. From this it appears, that the adhesion at the surfaces of bodies within the flow represents no physically unexplainable fact. By far the greater number of cases occurring in practice are still far away from the limit, at which a sliding of the liquid on the wall begins. An analogous procedure may be applied to the investigation of

Card 2/3

On the Consideration of Moistening in Solving Hydrodynamic Problems

57-12-19/19

the problem of the sliding of liquids with adhesiveness. In this case the normal pressure is understood to be the internal pressure of the liquid, with a magnitude exceeding 10^4 ata, and a transition of the limit of sliding may occur only at gradients of velocity at the wall surpassing the entirely incredible values of 10^{10} 1/sec.

ASSOCIATION: Institute teploenergetiki AN USSR Kiyev (Institute of Thermal Power AS Ukrainian SSR Kiyev)

SUBMITTED: June 3, 1957

AVAILABLE: Library of Congress

Card 3/3

SOV-21-58-4-8/29

AUTHORS: Gerashchenko, O.A. and ~~Nez~~archuk, M.M.

TITLE: On the Value of Friction Space Before the Entrance Edge of a Flat Plate (O velichine oblasti tormozheniya pered vkhodnoy kromkoy ploskoy plastiny)

PERIODICAL: Dopovidi Akademii nauk Ukrain's'koi RSR, 1958, Nr 4, pp 390-392 (USSR)

ABSTRACT: The authors consider the laminar flow of an incompressible viscous liquid before the entrance edge of a flat plate. They derive a formula which shows that the region of effect of viscous perturbations before the plate is rather limited. Taking water at 20°C flowing around a plate at a speed of 1 m/sec as an example, the space of viscosity effect is practically limited to 0.2 mm.

ASSOCIATION: Institut teploenergetiki AN UkrSSR (Institute of Thermal Power Engineering of the AS UkrSSR)

PRESENTED: By Member of the AS UkrSSR, I.T. Shvets

SUBMITTED: July 4, 1957

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Fluid flow--Theory 2. Fluid flow--Viscosity 3. Fluid flow
--Friction 4. Laminar boundary layer--Mathematical analysis

Card 1/1

SOV/95-58-6-19/24

AUTHOR: Gerashchenko, O.A., Cand.Tech.Sci. and Fedorov, V.G., Engineer.

TITLE: An instrument for measuring local thermal fluxes. (Pribor dlya izmereniya lokal'nykh teplovykh potokov)

PERIODICAL: Teploenergetika, 1958. No.6. pp. 89-90. (USSR)

ABSTRACT: Working in the Institute of Thermal Power Engineering of the Acad.Sci. Ukrainian SSR, the authors have developed an instrument which is used to determine local values of heat flux over a wide range of temperatures and thermal loadings. It is based on the use of a three-layer probe of thermo-electrode materials, the central one being the active element, and the two others serving to carry current. Fig.1. gives a sketch of the probe. When heat passes through the device the temperature difference set up across the centre layer is proportional to the rate of heat-flow; this temperature difference produces an electro-motive force, which is measured. The outer layers are made of different material from the middle one, so that a sort of differential thermocouple is set up. Normal thermocouple materials are used in the construction. The leads to the instrument must meet special requirements, and in particular, they must be very homogeneous - platinum, copper and silver proved satisfactory. The centre layer was made of such material as Constantan or Copel. The temperature difference between the current-carrying plates is about $2 \cdot 10^{-5}^{\circ}\text{C}$ per mm thickness for a heat flow of

Card 1/2

An instrument for measuring local thermal fluxes.

SCV/96-58-6-19/24

1 kcal/m².hr. In order to respond to thermal fluxes not less than 100 kcal/m².hr. with a thickness of 1 mm, the instrument must be sensitive to power of the order of 10⁻¹⁵ to 10⁻¹² W. Accordingly a double-cascade differential magnetic amplifier was used, fed by a stabilized frequency-generator connected to a constant-voltage device of the static type embodying a resonant reactor. A simple block circuit diagram is given in fig.2. Various procedures that were used to make up the probe are described. For example, high-temperature probes were made by forging the sheets in a high-frequency field in an inert atmosphere. A radiation method of calibration was used, the intensity being measured by a thermo-electric compensation radiometer. The circuit is given in fig.3. and the principles are described, with an explanation of difficulties that arise during calibration. The calibration curve (heat flux against meter reading) is a straight line; the scatter of the experimental points does not exceed 3%, and is due to zero drift of the magnetic amplifier. By improvements to the latter, the error could be reduced to 1%. There remains the difficulty of calibrating the device at heat fluxes greater than 20,000 kcal/m².hr., and linear extrapolation of the calibration curve is recommended for this purpose. As a method of measuring local values of heat flux with a probe 10 mm diameter and 1 mm thick, the instrument is quicker and more accurate than the usual methods, despite the defects mentioned. There are 4 figures. 1. Thermocouples--Development 2. Temperature--Measurement

Card 2/2

GERASHCHENKO O. A.

p. 2

PHASE I BOOK EXPLOITATION

SOV/3898

SOV/31-M-14

Akademiya nauk UkrSSR. Institut teploenergetiki

Teploobmen i gidrodinamika (Heat Transfer and Hydrodynamics) Kiyev, 1958. 190 p. (Series: Its: Sbornik trudov, no. 14) 2,000 copies printed.

Eds. of Publishing House: Ya.L. Kaplan and N.M. Labinova; Tech. Ed.: M.I. Yefimova; Editorial Board: I.T. Shvets (Resp. Ed.), Academician, Academy of Sciences UkrSSR; G.M. Shchegolev (Deputy Resp. Ed.), Candidate of Technical Sciences; N.M. Kondak (Resp. Secretary), Candidate of Technical Sciences; V.I. Tolubinskiy, Corresponding Member, Academy of Sciences UkrSSR; I.I. Chernobyl'skiy, Doctor of Technical Sciences; M.M. Nazarchuk, Candidate of Technical Sciences; P.I. Lavrov, Candidate of Technical Sciences; P.D. Shvetsov, Professor; and N.M. Pyatyshkin, Candidate of Technical Sciences.

PURPOSE: This collection of articles is intended for scientific workers and technical personnel in the fields of heat transfer and hydrodynamics.

COVERAGE: This collection of 18 articles deals with experimental and theoretical studies of problems in heat transfer and hydro-
Card 1/7

Heat Transfer and Hydrodynamics

SOV/3898

dynamics as they affect steam and gas turbines and heat-transfer devices. The results of theoretical investigations of heat transfer in turbine components and in elements of heat-utilizing apparatus are described, and new calculation methods are suggested. Several problems of the thermodynamics and aerodynamics of steam and gas turbines are discussed. References follow each article.

TABLE OF CONTENTS:

Shvets, I.T., O.A. Gerashchenko, and Ye.P. Dyban. Investigation of the Temperature Fields in the Hubs of Turbine Rotors by Means of the Thermal-Analogy Method 3

On the basis of a theoretical analysis of the system of equations describing the temperature field of a bladed rotor, the authors present a method for taking into account the thermal resistance of the blade stems. This method may be used for calculations of steady-state heat conditions as well as unsteady-state conditions.

Agranovich, V.M., O.A. Gerashchenko, and M.M. Nazarchuk. Approximate Method for Determining Temperature Fields and Stresses in a Drum-Type Turbine Rotor at Starting 20
Card 2/7

Heat Transfer and Hydrodynamics

SOV/3898

The authors present a simplified method for approximating the temperature fields and stresses in a drum-type turbine rotor. The method does not take axial variation of temperature into account but considers each section of the rotor as part of an infinitely long hollow cylinder with boundary conditions corresponding to those for the particular section under consideration. Results calculated by the approximate method are compared with those determined by more accurate calculations. An analysis of the discrepancies leads to the conclusion that the simplified method is sufficiently accurate for most engineering purposes. The following personalities are mentioned: V.I. Fedorov, V.M. Agranovich, and N.N. Shel'menko, all of the Heat-Engine Laboratory, Institut teploenergetiki AN UkrSSR (Institute of Heat-Power Engineering, Academy of Sciences UkrSSR).

Dorfman, A.Sh. Simple Calculation Method for a Laval Nozzle 26
The author presents the results of an experimental study of the process of heat transfer during the condensation of steam. A detailed description of the experimental apparatus and the methods employed is given, as well as a qualitative description of the physical phenomena involved in the process of condensation on the basis of the results obtained.

Card 3/7

FEDOROV, V.G. [Fedorov, V.H.]; GERASHCHENKO, O.A. [Gerashchenko, O.A.]

Investigation of heat exchange between a wall and a granular
material. Zbir.prats' Inst.tepl. AN URSS no.16:68-72 '59.
(MIRA 13:11)

(Heat--Transmission)

0716/01/000/003/000
2107/000

AUTHORS: Gerasimchenko, O. A., Dzhetyayenko, P. I., Karpenko, V. P.
and Karimov, E. B.

TITLE: Selecting the automatic control system for a differential calorimeter

SOURCE: Akademiya Nauk Ukrayins'koyi RSR. Instytut elektrotekhniki. Sbornik tradov, v. 18, 1981. Voprosy magnitnykh izmereniy, 27-37

TEXT: The authors consider various methods of automatic control of a differential calorimeter used to measure losses in ferromagnetic materials at high frequencies. A ferromagnetic sample, subjected to a suitable voltage and therefore producing heat due to losses, is placed in a measuring calorimeter. Another identical calorimeter serves as a standard. Heat is supplied to it until temperatures are the same in both calorimeters. When the temperatures are equal, heat is supplied to both calorimeters at the same rate and the electric losses in the sample can be deduced from the electrical

Card 1/2

Selecting the automatic...

07/16/61/016/000/000/013
0207/0501

power supplied to the standard calorimeter. The authors show that these measurements can be automated by suitable control of the power supplied to the standard calorimeter. The authors discuss continuous and intermittent methods, using either temperature or its rate of change with time as the input signal. It was found that the simplest and most satisfactory system was an intermittent control system, based on temperature as the input signal. This signal was amplified and used to work a polarized relay which controlled the heater of the standard calorimeter. The control system was checked experimentally and found to be reliable and accurate. There are 4 figures. ✓

Card 2/2

GERASHCHENKO, Oleg Arkad'yevich, kand. tekhn. nauk; FEDOROV, Vladimir
Gavrilovich, inzh.; MORDVINOVA, N.P., inzh., ved. red.;
TOLCHINSKIY, Ye.M., inzh., red.; SOROKINA, T.M., tekhn. red.

[Heat flow transducers] Datchik teplovogo potoka. Moskva, Filial
Vses. in-ta nauchn. i tekhn. informatsii, 1958. 10 p. (Peredovoi
nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 34. No.P-58-
80/8) (MIRA 16:3)

(Transducers) (Heat--Transmission) (Heat exchangers)

BOROVNIKOV, S.I. [Borovykov, S.I.]; GERASHCHENKO, O.A. [Gerashchenko, O.A.];
FEDOROV, V.G. [Fedorov, V.H.]

Radiation furnace. Zbir. prats' Inst. tepl. AN URSS no.24:128-132 '62.
(MIRA 16:3)
(Electric furnaces)

GERASHCHENKO, O.A.; DEKHTYARENKO, P.I.; KARPENKO, V.P.

Analysing diagrams for the automatic control of differential
calorimeters. Trudy inst. Kom.stand.mer i izm. prib no.64:
197-207 '62. (MIRA 16:5)
(Magnetic measurements) (Calorimeters) (Automatic control)

L 34049-66 EWT(d)/EWT(l)/EWP(v)/T/EWP(k)/EWP(h)/EWP(l) IJP(c) AT
 ACC NR: AP6025519 SOURCE CODE: UR/0115/66/000/001/0065/0066

AUTHOR: Gerashchenko, O. A.; Ionova, N. N.

ORG: none

TITLE: Thermoelectromotive force of galvanic thermocouples

SOURCE: Izmeritel'naya tekhnika, no. 1, 1966, 65-66

TOPIC TAGS: thermocouple, thermoelectromotive force, thermoelectric property, heat conduction, potentiometer, thermoelectric equipment

ABSTRACT: The thermoelectric characteristics of large thermopiles (several thousand junctions) were studied. Geometric self-similarity was established on the basis of thermoelectromotive force measurements in a large number of homogeneous thermoelectrically identical specimens of heat conductors with diameters ranging from 0.1- to 1.5 mm. Identical thermoelectromotive forces were measured throughout this entire range for identical relative coating dimensions. A high-resistance potentiometer was then used for measuring the thermoelectromotive force for various ratios of the cross sectional area of the coating to that of the substrate thermoelectrode. The setup used for making the measurements is illustrated. The high thermal conductivity of the electrodes may cause a considerable difference between the temperature of the junctions and that of the ambient medium. The temperature difference was estimated by considering the worst case with maximum wire diameter (1.5 mm).

Cord 1/2

UDC: 536.532

L 34049-66

ACC NR: AF6025519

and the thickest copper coating (75 μ). Calculations show that the error due to the thermal conductivity of the electrodes cannot exceed 0.5%. Curves are given showing thermoelectromotive force as a function of It/ld^2 where I is the current strength; t is the copper plating time; l is the length of the copper-plated section of the wire; d is the diameter of the wire. The results show that a section of a thermoelectrode uniformly coated with some other thermoelectric material may be replaced by an equivalent system made up of two conductors connected only at the ends with cross sections and lengths equal respectively to the cross sections and lengths of the substrate and the coating material. An expression is derived which may be used under specific conditions for determining the optimum coating parameters for a maximum signal from the sensing element in heat flux converters. The data given in this paper may be used for determining the thermoelectric properties of galvanic thermocouples or for making thermocouples with predetermined properties. Orig. art. has: 3 figures and 1 formula. [JPRS: 35,995]

SUB CODE: 20, 09 / SUBM DATE: none / ORIG REF: 006 / CTH REF: 001

Card 2/2 *B*

L 32603-66 ENT(d)/ENF(v)/ENP(k)/ENP(h)/ENP(l) JAJ/GD/RC
 ACC NR: AT6011939 SOURCE CODE: UR/0000/66/000/000/0207/0210

AUTHOR: Gerashchenko, O. A. (Kiev); Fedorov, V. G. (Kiev)

ORG: none

TITLE: Thermoelectric heat flow measuring elements

SOURCE: Vsesoyuznaya konferentsiya po avtomaticheskomu kontrolyu i metodam elektricheskikh izmereniy, 5th. Avtomaticheskyy kontrol' i metody elektricheskikh izmereniy; trudy konferentsii, t. 2: Izmeritel'nyye informatsionnyye sistemy. Ustroystva avtomaticheskogo kontrolya. Elektricheskiye izmereniya neelektricheskikh velichin (Automatic control and electrical measuring techniques; transactions of the conference, v. 2:

Information measurement systems. Automatic control devices. Electrical measurements of nonelectrical quantities). Novosibirsk, Izd-vo Nauka, 1966, 207-210

TOPIC TAGS: thermocouple, conductive heat transfer, intensive heat transfer, flow measurement

ABSTRACT: The knowledge of the local value of the heat flux is very important information for the understanding of processes in devices based on heat exchange. In the past no instruments were available for the measurements of heat transfer through very small surfaces in objects of arbitrary configuration. Consequently, the present authors developed universal, highly accurate and stable devices which do not generate distortions of the original physical

Cord 1/2

L 32603-66

ACC NR: AT6011939

process. The units are based on differential thermocouples using thermoelectrode materials as auxiliary walls generating a temperature difference proportional to the heat flux. The existing devices can measure local heat fluxes up to $140,000 \text{ W/m}^2$, and single sensors are 8 mm in diameter and 1 mm high. More complicated geometrical arrangements can gather 100 single sensors within a $d = 25 \text{ mm}$, $h = 1.5 \text{ mm}$ disk, or 1,000 sensors within a $d = 10 \text{ mm}$, $h = 1.2 \text{ mm}$ space. Work is in progress on a $1,000,000 \text{ W/m}^2$ unit. The maximum operating temperature is $1,500 \text{ C}$. When the sensor is built along an isothermal surface, then the distortion of the original field may be completely neglected and the operating temperature raised up to $6,000 \text{ C}$. Orig. art. has: 2 figures.

SUB CODE: 20, 14 / SUBM DATE: 29Nov65 / ORIG REF: 004

Card

2/2 *SD*

ACC NR: AT7004205

SOURCE CODE: UR/0000/66/000/000/0012/0014

AUTHORS: Gerashchenko, O. A.; Fedorov, V. G.

ORG: none

TITLE: Investigation of high-temperature processes with the aid of transducers sensitive to local heat fluxes

SOURCE: AN SSSR. Institut metallurgii. Eksperimental'naya tekhnika i metody vysokotemperaturnykh izmereniy (Experimental techniques and methods of high temperature measurement). Moscow, Izd-vo Nauka, 1966, 12-14

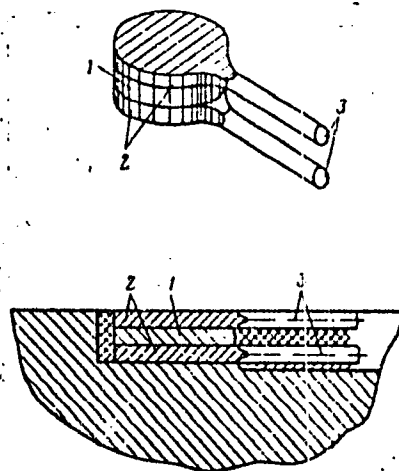
TOPIC TAGS: temperature detector, temperature instrument, heat measurement, heat flux pickup

ABSTRACT: A device for determining local heat fluxes (see Fig. 1) was developed at the Institute for Thermal Energy, AN UkrSSR (Institut teploenergetiki AN UkrSSR). The device, which operates on the thermoelectric principle, is capable of measuring heat fluxes up to $120000 \text{ Kcal/m}^2/\text{hour}$ across an area of 0.5 cm^2 with an accuracy of $\frac{1}{3}\%$. A scheme for determining the temperature of hot gases with the constructed device was also developed. It is concluded that, with extension of the working temperature and further improvement in the sensitivity, the device will afford greater accuracy than is obtainable with existing methods in determining local heat fluxes and temperatures of hot gases.

Cord 1/2

ACC NR: AT7004205

Fig. 1. Schematic of the device.
1 - constantan layer, 2 - platinum
or copper layer, 3 - platinum or
copper leads



Orig. art. has: 4 graphs.

SUB CODE: 14, 13/ SUBM DATE: none

Card 2/2

SHAPRINSKIY, Nikolay Aleksandrovich; GERASHCHENKO, S.A., red.

[Calculating stone arches performing under conditions of
great temperature variations] K raschetu kamennykh svodov,
rabotaiushchikh v usloviakh vysokotemperaturnykh perepa-
dov. Kiev, Nauchno-issl. in-t stroitel'nykh konstruktsii,
1962. 27 p. (MIRA 17:10)

GEFASHCHENKO, S. K.

GEFASHCHENKO, S.K. "How to Improve Methods of Determining Diseases in Field Crops During Their Inspection," Selektziia i Semenovodstvo, vol. 13, no. 3, 1946, pp.51-53. 61.9 Se5

So: Sira SI-90 53,15 Dec 1953

GERASHCHENKO, S. K.

GERASHCHENKO, S. K. "Effect of Early Flight of Potato (*Macrosporium solani*) on Yield,"
Sovetskaya Agronomiya, vol. 5, no.5, 1947, pp. 63-65. 20So84

So: S'ra SI-90 53, 15 Dec 1953

GERASHCHENKO, S. K.

Problem of preparing personnel for work in agronomy. Sov. Agron., 10, No 9, 1952.

GERASHCHENKO, S.K.; KUZNETSOV, T.A.

Loss of sugar-beet transplants resulting from diseases in roots
for seeding. Sakh.prom. 30 no.7:55-56 J1 '56. (MLEA 9:11)

1. Voronezhskiy sel'skokhozyaystvennyy institut (for Gerashchenko).
2. Semennaya inspeksiya Voronezhskogo sakhsevklotresta (for Kuznetsov).

(Sugar beets)

GERASHCHENKO, T.

GERASHCHENKO, T.

Using a cutting machine at full capacity. Mast. ugl. 3 no. 7:6 JI '54.
(MIRA 7:7)

1. Mashinist vrubovoy mashiny.
(Coal-mining machinery)

GERASHCHENKO, V.

Credit in the service of the national economy's development.
Dokl. kred. 12 no. 3:21-30 S'54. (MLRA 8:2)
(Credit)

OMRASHCHENKO, V.

Intensify the struggle to fulfill the decisions of the party and the
government. Den. 1 kred. 13 no.5:3-10 My '55. (MIRA 8:7)
(Banks and banking)

GERASHCHENKO, V.

Clearing settlements in a socialist economy. Vop. ekon. no.3:39-51
14r '57. (MIRA 10:6)

(Clearinghouse)

Gerasimov, V.

Improving business accounting. Den. 1 kred. 15 no.7:1-3
31 '57.

(MLA: 10:8)

(Finance) (Russia--Industries)

GERASHCHENKO, V.

Business accounting and capital construction. Vop. ekon. no.4:
23-35 Ap '62. (MIRA 15:4)

(Technological innovations) (Credit)
(Construction industry--Finance)

ACC NR: AP7009097

SOURCE CODE: UR/0413/67/000/003/0070/0070

INVENTOR: Glukharev, A. I.; Foygel', L. A.; Sushinkin, Ye. I.; Gerashchenko, V. A.

ORG: None

TITLE: An oxygen flow indicator. Class 30, No. 191046

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3, 1967, 70

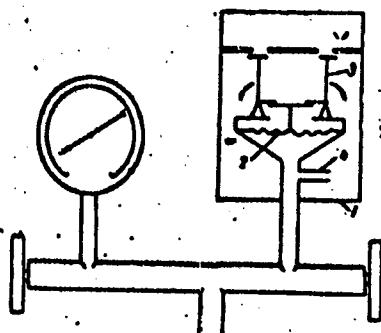
TOPIC TAGS: flow meter, oxygen, medical equipment

ABSTRACT: This Author's Certificate introduces an oxygen flow indicator containing a housing with a diaphragm which interacts with indicator flags. The instrument may be used at relatively high oxygen pressures. The cavities above and below the diaphragm are connected through a hydraulic resistor which may be made in the form of a tube with a small inside diameter.

Card 1/2

UIC: 612.22.02-087

ACC NR: AP7009097



1—housing; 2—diaphragm; 3—flags; 4—hydraulic resistor

SUB CODE: 14, 06 SUBM DATE: 15Mar65

Card 2/2

1. 10793-66 EWT(e)/EWT(m)/EWP(w)/EWP(v)/EWP(k)/EMA(h)/ETC(m) LWP(c) WW/EM/GS
 ACC NR: A16001080 SOURCE CODE: UR/0000/55/000/000/0023/0033
 AUTHORS: ^{44, 55} Vaynberg, D. V.; ^{44, 55} Gerashchenko, V. M.; ^{44, 55} Roytfarb, I. Z.; ^{44, 55} Sinyavskiy, A. L. ⁵⁵
 ORG: ^{44, 55} Kiev Structural Engineering Institute (Kiyevskiy inzhenerno-stroitel'nyy institut) ⁵⁴
 TITLE: A summary of network equations of plate deflection by the variational method ²⁶
 SOURCE: Soprotivleniye materialov i teoriya sooruzheniy (Strength of materials and the theory of structures), no. 1. Kiev, Izd-vo Budivel'nyk, 1965, 23-33
 TOPIC TAGS: stress analysis, thin plate, structural analysis, network structural analysis, finite difference method
 ABSTRACT: ^{16, 44, 55} A method of applying network equations for plate deflection problems is developed. ²⁶ A thin plate, such as that shown in Fig. 1, is considered.

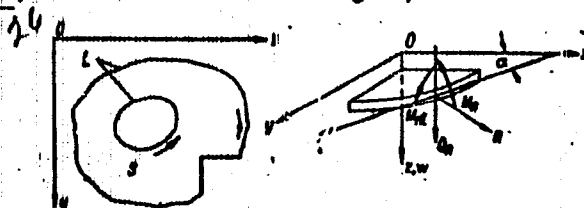


Fig. 1.

Cord 1/4

I 10793-66

ACC NR: AT6001080

The plate occupies the domain S bounded by the curve L consisting of

$$l_j = [l_j, l_{j+1}] \quad (j = 1, 2, \dots, m)$$

$$l_{m+1} = l_1.$$

The potential energy of the plate is given as

$$\Pi = V - A,$$

where V is the energy of elastic deformation (elastic potential) and A is the work of external edge and surface forces. Green's formula is applied to the elastic potential to yield

$$\begin{aligned} V = & \frac{D}{2} \iint_S w \Delta \Delta w \, dx \, dy + \sum_{j=1}^m \oint_{l_j} \left[(1-\nu) \left(\frac{\partial^2 w}{\partial x^2} \cos^2 \alpha + \right. \right. \\ & \left. \left. + 2 \frac{\partial^2 w}{\partial x \partial y} \sin \alpha \cos \alpha + \frac{\partial^2 w}{\partial y^2} \sin^2 \alpha \right) + \nu \Delta w \right] \frac{\partial w}{\partial n} \, dl + \\ & + \sum_{j=1}^m \oint_{l_j} \left[(1-\nu) \frac{\partial}{\partial l} \left[\left(\frac{\partial^2 w}{\partial x^2} - \frac{\partial^2 w}{\partial y^2} \right) \sin \alpha \cos \alpha - \right. \right. \\ & \left. \left. - \frac{\partial^2 w}{\partial x \partial y} (\cos^2 \alpha - \sin^2 \alpha) \right] - \left(\frac{\partial^2 w}{\partial x^2} + \frac{\partial^2 w}{\partial x \partial y} \right) \cos \alpha - \left(\frac{\partial^2 w}{\partial y^2} + \right. \right. \\ & \left. \left. + \frac{\partial^2 w}{\partial x \partial y} \right) \sin \alpha \right] w \, dl + (1-\nu) \sum_{j=1}^m \left[\left(\frac{\partial^2 w}{\partial y^2} - \frac{\partial^2 w}{\partial x^2} \right) \sin \alpha \cos \alpha + \right. \end{aligned}$$

Card 2/4

L 10793-66

ACC NR: AT6C01030

6

$$+ \frac{\partial w}{\partial x \partial y} (\cos^2 \alpha - \sin^2 \alpha) \left. w \right|_{l=l_j}^{l=l_{j+1}},$$

and the work of internal forces is

$$A = \iint q w \, dx \, dy - \sum_{l=1}^n \oint M_n \frac{\partial w}{\partial n} \, dl + \\ + \sum_{l=1}^n \oint \left(Q_n - \frac{\partial M_{nl}}{\partial l} \right) w \, dl + \sum_{l=1}^n \bar{M}_{nl} w \left. \right|_{l=l_j}^{l=l_{j+1}}.$$

The network system is applied to the plate as is indicated in Figures 2 and 3,

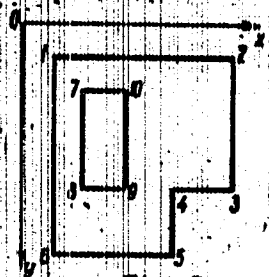


Fig. 2

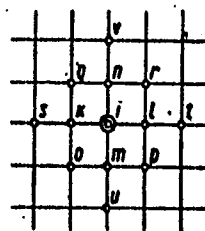


Fig. 3

Card 3/4

L 10793-66

ACC NR: AT5001080

where straight line segments $L_j^{(1)}$ are perpendicular to the x-axis and segments $L_j^{(2)}$ are perpendicular to the y-axis. The ensuing quadratic network is used for substituting summation by the rectangular formula into the integral terms of the given energy expression. Differential substitutions are accomplished by computation of central differences. The authors develop and illustrate the mechanics of defining and evaluating the summation terms. The method presented was applied to the formulation of systems of difference equations for plates of variable stiffness, anisotropic plates, contact problems, and shells. The results of the applications are to be published in subsequent articles. Orig. art. has: 10 figures and 8 equations.

SUB CODE: 20/ SUBM DATE: 14May65/ ORIG REF: 002

Card

9c
4/4

GERASHCHENKO, Boris Sergeyevich; ; GELASHCHENKO, Vladimir Sergeyevich;
KORPENKO, A.P., red.; LISOV, V.Ye., red.; GERASIMOVA, Ye.S.,
tekhn. red.

[Problems in the economics of U.S.S.R. industries at the present
stage of the building of communism] Voprosy ekonomiki promyshlen-
nosti SSSR na sovremennom etape kommunisticheskogo stroitel'stva.
Moskva, Ekonomizdat, 1962. 355 p. (MCRA 15:8)
(Russia--Industries)

BACHURIN, A.V.; MARGOLIN, N.S.; KONDRASHV, D.D.; GORICHEV, N.V.;
ROGOVSKIY, N.I.; YAMPOL'SKIY, M.A.; TYUKOV, V.S.;
ROTSHTEYN, L.A.; GERASHCHENKO, V.S.; KOTOV, V.F.;
BAZANOVA, G.V., red.; PORTYANNIKOV, N.S., red.;
GERASIMOVA, Ye.S., tekhn. red.

[Commodity and monetary relations during the period of
transition to communism] Tovarno-denezhnye otnosheniia v
period perekhoda k kommunizmu. Moskva, Ekonomizdat, 1963.
386 p. (MIRA 16:5)

(Economics)

D'YACHENKO, V.P., glav.red.; BACHURIN, A.V., kand. ekon. nauk, zam. glav. red.; GERASHCHENKO, V.S., kand. ekon. nauk, zam. glav. red.; ALEKSANDROV, A.M., doktor ekon. nauk, prof., red.; KISMAN, N.A., red.; LYUBIMOV, N.N., doktor ekon. nauk, prof., red.; PERESLEGIN, V.I., doktor ekon. nauk, prof., red.; USOSKIN, M.M., doktor ekon. nauk, prof., red.; BREGEL', E.Ya., doktor ekon. nauk, prof., red.; FLESHAKOV, S.Ye., red.; BUTAKOV, D.D., kand. ekon. nauk, red.; FODSHIVALENKO, P.P., red.; CHIZHOV, E.Ya., kand. ekon. nauk, red.; SHEMENEV, M.K., kand. ekon. nauk, red.; DARKOV, G.V., red.

[Financial and credit dictionary] Finansovo-kreditnyi slovar'. Chleny glav. red.: A.M.Aleksandrov i dr. Moskva, Finansy. Vol.2. M-1A. 1964. 688 p. (MIRA 17:9)

1. Chlen-korrespondent AN SSSR (for D'yachenko).

STRELYANCO, F.V.; RESNICHENKO, B.V.; GEMASHCHENKO, Ye.I.; STENYUKOV, B.V.;
SUISARENKO, N.V.; POBANOY, V.A.; SPICHAKIN, I.P.; GORBACHEV, Ye.I.;
UVAROVA, A.F., tekhnicheskii redaktor.

[Spare parts for the S-4 self-propelled combine; a reference catalog]
Zapachnye chasti samokhodnogo kombaina S-4; spravochnik-katalog.
Moskva, Gos.nauchno-tekhnicheskoe izd-vo mashinostroit.lit-ry, 1956.
179 p. (MLRA 9:5)

(Combines (Agricultural machinery))

ACCESSION NR: AP4028982

S/0280/64/000/002/0114/0120

AUTHOR: Gerashchenko, Ye. I. (Sverdlovsk)

TITLE: Degree of stability of nonlinear systems under sliding conditions

SOURCE: ANSSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 2, 1964, 114-120

TOPIC TAGS: automatic control, nonlinear automatic control, automatic control stability, nonlinear automatic control theory

ABSTRACT: Sliding conditions in a variable-structure automatic-control system are considered. The position of the sliding hyperplane in the phase space depends on a certain parameter whose optimum value corresponds to the maximum stability of the system. The characteristic equation of the fundamental differential equation, which describes the transient process in the control system, is: $\lambda^{n-1} + c_1(r)\lambda^{n-2} + \dots + c_{n-1}(r) = 0$. Its roots are algebraic functions $\lambda_1(r), \lambda_2(r), \dots, \lambda_{n-1}(r)$. Denoting $\text{Re } \lambda_1(r) = \alpha_1(r)$, the degree of stability will be

Cord 1/2

ACCESSION NR: AP4028982

given by: $\delta(r) = \max_i u_i(r)$, ($i = 1, 2, \dots, n-1$). The method of finding the optimum value $r = r^*$ is shown and is claimed to be applicable to any relationship between the parameter and the coefficients of the characteristic equation. Orig. art. has: 2 figures and 20 formulas.

ASSOCIATION: none

SUBMITTED: 18Jun63

DATE ACQ: 30Apr64

ENCL: 00

SUB CODE: IE, NG

NO REF SOV: 006

OTHER: 000

Card 2/2

GERASHCHENKO, Ye.I. (Sverdlovsk):

"On the stability of motion in the hyperplane of sliding".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

L 2119-65 EWT(d) Po-4/Pq-4/Pg-4/Pk-4/Pl-4 IJP(o)/AFTC(p)/AFETR/SSD/ASD(d)/
RAEM(1)/AMD/ASD(a)-5/ESD(dp)/ESD(t)/RAEM(t)/Pb-4 BC 8/0040/64/028/004/0761/0765
ACCESSION NR: AP4043295

AUTHOR: Barbnashin, Ye. A.; Geraschenko, Ye. I. 45

TITLE: On stabilization of control systems 9

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 4, 1964, 761-765

TOPIC TAGS: control system stabilization, automatic regulation, cybernetics, control theory

ABSTRACTS: By means of the method of Lyapunov's functions, a general approach to the description of possible stabilization methods of the automatic regulation systems is considered. It is assumed that the transfer function of the object has (n-1) poles in the left semiplane and one simple null pole. The method for choosing the parameters is given which produce the asymptotic stability of systems of variable structures with an arresting device. Orig. art. has: no figures and 23 equations.

ASSOCIATION: None

Card 1/2

L 2119-65
ACCESSION NR: AP4043295

SUBMITTED: 29Feb64

ENCL: 00

SUB CODE: MA, IE

NO REF SOV: 007

OTHER: 000

Card 2/2

GERASHCHENKO, Yuliy; KRYZHNON, A.P.

Use of the method of division of motion in analyzing a certain non-linear system. *Dif. urav. i mekh.* 1990-1991, 9, 65.

(RIRA 18:10)

1. Sverdlovskoye otdeleniye Matematicheskogo instituta imeni Steklora.

00832-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)
ACCESSION NR: AP501904

UR/0103/65/026/006/0995/1004
62-503.53

AUTHOR: Barabashin, Ye. A. (Sverdlovsk); Gerashchenko, Ye. I. (Sverdlovsk)

TITLE: Principle for synthesizing stabilization systems 55,44 25
B

SOURCE: Avtomatika i telemekhanika, v. 26, no. 6, 1965, 995-1004

TOPIC TAGS: automatic control, automatic control design, automatic control system,
automatic control theory 9,55,44 14

ABSTRACT: The successive reduction of the phase-space order is suggested as a principle of stabilization. The imperfect sliding is considered which is characterized by fast movements of the state point in the neighborhood of a discontinuity surface. By neglecting these fast movements and considering only slow migration of the state point, the imperfect-sliding process is reduced to a perfect-sliding process describable by a lower-order equation. The principal set of differential equations is regarded, too, as a set describing the imperfect sliding. By neglecting the fast movements, a set describing the first-order sliding is obtained. By separating fast and slow movements in the new set, a (n-2)-order set describing the second-order sliding is obtained, and so on. Formulas for the 1st and 2nd and n-order slidings are derived. Orig. art. has: 2 figures and 37 formulas.

Card 1/2

LO0832-66

ACCESSION NR: AP5015904

ASSOCIATION: none

SUBMITTED: 28Aug64

NO REF SOV: 004

ENCL: 00

SUB CODE: DP, IE

OTHER: 000

Card 2/2

L 8798-66 EWT(d)/EWP(k)/EWP(h)/EWP(l)/T/EWP(v) IJP(c)
 ACC NR: AP5026960 SOURCE CODE: UR/0103/65/026/010/1771/1780

AUTHOR: Gerasimovskiy, Ye. I. (Sverdlovsk)

ORG: none

TITLE: Synthesis of relay systems

SOURCE: Avtomatika i telemekhanika, v. 26, no. 10, 1965, 1771-1780

TOPIC TAGS: automatic control system, mathematic analysis, automatic control theory,
 amplification factor 16, 44, 55 14

ABSTRACT: The author considers the problem of accelerating sliding conditions in relay systems. It is assumed that the controlled element has a rather high amplification factor. This makes it possible to determine the ideal sliding conditions as non-ideal conditions until high speeds are reached. From the mathematical standpoint, a high amplification factor means a small parameter at high derivatives in control process equations. Sliding of the n -th order is determined and conditions for its existence are given. Rapid motion in sliding of the second order is studied in detail. A method is proposed for synthesis of relay systems by successively reducing the dimensionality of the phase space for the quantity to be controlled and its derivatives. The dimensionality is reduced by successively
 Card 1/2 UDC 62-504.35

L 8798-66

ACC NR: AP5025960

adding sliding conditions of high orders. Author is grateful to Ye. A. Farbashin for discussion and consultation in the course of this work. Author also expresses his deep gratitude to Engineer Yu. K. Sergeyev, Sverdlovsk Department MI AN SSSR (Sverdlovskoye otdeleniye MI AN SSSR) for experimental research on the proposed type of systems. Orig. art. has: 4 figures, 29 formulas.

SUB CODE: 09, 12 / SUBM DATE: 16Nov64 / ORIG REF 005 / OTH REF 001

jw
Card 2/2

GERASHCHENKO, Ye.I.; KISELEV, L.V.

Stability of a control system with accelerated sliding mode
of operation. Dif. urav. 1 no. 12:1568-1577 D '65.
(MIRA 18:12)

1. Matematicheskiy institut imeni Steklova, Sverdlovskoye
otdeleniye. Submitted May 12, 1965.

L 33768-66 EWT(d)/EWT(1)/EWP(c)/EWP(v)/EWP(k)/EWP(h)/EWP(i) IJP(c) BC
 ACC NR: AP6006141 SOURCE CODE: UR/0376/65/001/010/1292/1300

AUTHOR: Gerashchenko, Ye. I.; Kleynenov, A. F.

ORG: Sverdlovsk Department of the Mathematical Institute im. V. A. Steklov (Sverdlovskoye otdeleniye Matematicheskogo instituta)

TITLE: Analysis of a nonlinear system by the method of separation of motions

SOURCE: Differentsial'nyye uravneniye, v. 1, no. 10, 1965, 1292-1300

TOPIC TAGS: nonlinear differential equation, nonlinear mechanics, nonlinear oscillation

ABSTRACT: The authors apply the method of separation of motions to the investigation of a system in a forced slipping regime through the organization of high-order slipping regimes. The system as discussed by Ye. A. Barbashin and Ye. I. Gerashchenko (Differentsial'nyye uravneniye, 1, no. k. 25-32, 1965) contains a controlled object with nonlinearities characteristic of those found in practice, such as constraints, insensitive zones, and free-playing slack. Accelerated slippage is important because it imparts to a control system the properties of essentially nonlinear systems and intensifies the "roughness" of the controller relative to the parameters of the controlled object, besides improving the quality of control. To realize a forced slipping regime necessitates complicating the structure of the controller, which leads to con-

Card 1/3

L 33768-66

ACC NR: AP6006141

siderable difficulties in the mathematical analysis of the system. The stability of a system consisting of a control and linear object is regularly investigated by separation of the motions into fast and slow components. This is the method of A. A. Andronov, A. A. Vitt, and S. E. Khaykin in the theory of discontinuous oscillations. However, the controlled object is generally nonlinear; therefore, the present report demonstrates how to apply this method of separation of motions to the investigation of the above slipping regime. It considers the following system:

$$\begin{aligned}\frac{dx_1}{dt} &= x_1, \quad \frac{dx_2}{dt} = \Phi(x_2, \dot{x}_2), \\ \frac{dx_3}{dt} &= -ax_3 - bx_2 - cx_1 - K\Psi(|x_1|\text{sign}\sigma_1), \\ \sigma_1 &= x_3 + Ax_2 + B|x_1|\text{sign}\sigma_2, \quad \sigma_2 = Cx_1 + x_2,\end{aligned}$$

where $x=(x_1, x_2, x_3)$ is a controlled vector quantity; $\Phi(x_2, \dot{x}_2)$ is a piecewise-linear function, possibly multiply-valued, which describes the nonlinearity of the constraint in the coordinate x_3 and of the free-playing slack; $\Psi(|x_1|\text{sign}\sigma_1)$ is also a piecewise-linear function, which describes the zone of insensitivity of the switching device or controller; C is a positive constant. The problem is to evaluate the influ-

Card 2/3

L 33768-66

ACC NR: ~~AP0000141~~

HPG 500731

ence of the functions Φ and Ψ upon the stability of the null solution of system (1), and also to determine the parameters of self-excited oscillations if they arise. Orig. art. has: 2 figures, 16 formulas.

SUB CODE: 03,12/

SUBM DATE: 16Apr65/

ORIG REF: 002

Card 3/3

<p>GERMANIA, 1941</p> <p>CA</p>		<p>11A</p>	
<p>Enzymic cleavage and the structure of proteins. I. N. Belantsov, Ya. I. Gerasimovskaya and E. V. Parina. <i>Dokl. Akad. Nauk S.S.S.R.</i> 1940, No. 3-10; <i>Chem. Revs.</i> 1941, II, 224. --Changes in viscosity, optical activity and carbonyl groups were followed during the enzymic cleavage of gelatin, egg and serum albumin. With gelatin the viscosity decreases at the start of the reaction with no change in optical activity which is taken to mean that gelatin has a micellar structure. Egg and serum albumin show hydrolysis at the start of the reaction and, therefore, are assumed to have a mol. structure. The viscosity and optical activity of the albumins increase after treatment with HCl at 80-85°. The cause of this change in the proteins is assumed to be a transformation from a mol. structure to a micellar structure. Lawrence Atkin</p>			
<p>INTERNATIONAL LITERATURE CLASSIFICATION</p>			
<p>FROM DIVISION</p>			
<p>EXCISE NO. ONLY</p>			
<p>EXCISE NO. ONLY</p>			

KUKHARSKIY, M.P., gornyy inzh.; GERASHCHENKO, Yu.N., gornyy inzh.

Descentional ventilation of workings in hydraulic mines.

Ugol' 38 no.12:39-41 '63.

(MIRA 17:4)

DAVANKOV, A.B.; ZAMBROVSKAYA, Ye.V.; GERASHCHENKO, Z.V.

Synthesis and study of sulfhydryl derivatives of
polystyrene and its copolymers. Part 2. Vysokom.soed.
3 no.10:1468-1473 0 '61. (MIRA 14:9)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni D.I.
Mečel'syeva.

(Styrene polymers) (Mercapto compounds)

545

GERASICHEVA, Z.V.
AUTHORS: Botnikov, Ya. A. and Gerasicheva, Z.V. (V.N.I.I. NP)
TITLE: Thermal cracking of heavy distillates from sulphurous crude oils. (Termicheskiy kreking tyazhelykh distillyatov sernistykh neftey).
PERIODICAL: "Khimiya i Tekhnologiya Topliva i Masel" (Chemistry and Technology of Fuels and Lubricants), 1957, No.2, pp. 40 - 44 (U.S.S.R.)
ABSTRACT: Thermal cracking of a fraction boiling at 320-450°C obtained during direct distillation of sulphurous crude oil was investigated on a laboratory scale apparatus (ref.1), and the results obtained compared with those of catalytic cracking. Thermal cracking was carried out in two modifications:
1) single furnace cracking with recycling in order to obtain petrol and cracking residue; 2) single furnace cracking with recycling in order to obtain petrol, diesel fuel and cracking residue. Material balances are shown in Tables 1, 2 and 3. The dependence between the yield of the total gaseous and liquid products and the yield of carbonised residue is shown in Fig.1. Optimum conditions: duration 90 mins, temperature 420°C. Experiments were repeated using an apparatus for continuous cracking at a temperature of 480°C and 35 atm. pressure (Tables 4, 5). The results were similar to

Cont 1/2

Thermal cracking of heavy distillates from sulphurous crude oils. (Cont.)

those obtained on intermittent operation. The comparison of results obtained on thermal and catalytic cracking are given in Table 6. Thermal cracking produces 24.1% of petrol and 39.4 of diesel fuel, total yield of light products - 63.5%. On catalytic cracking the corresponding yields were: 32.3%, 23.7% and 57.4% respectively. Octane number of petrol produced on thermal cracking - 68, and of that produced on catalytic cracking 78. Cetane number of diesel fuels were 41 and 30 respectively. The proportion of residue left on thermal cracking - 28.2% and on catalytic cracking 23.7%. 1 figure, 6 tables, four Russian references.

Card 2/2

GERASICHENYA, Z.V.; BOTNIKOV, Ya.A.

Thermal cracking of paraffin to obtain products for the
production of detergents. Trudy VNII NP no. 0:15-21 '63.
(MIRA 17:6)

GERASICHEVA, Z.V.; BOTNIKOV, 'a.A.; OSIFOVA, Ye.V.

Obtaining products for oxo synthesis by the thermal cracking
of paraffin. Trudy VNII NP no. 9:22-27 '63. (MIRA 17:6)

GERASINCHIK, V.G. [Herasymchyk, V.H.], inzh.-mekhanik

Mechanized spreading of local organic fertilizers. Mekh. sil'. hosp.
11 no.9:21-22 S '60. (MIRA 13:9)
(Fertilizer spreaders)

67061

~~16(4)~~ 16.3400

SOV/44-59-9-9055

Translation from: Referativnyy zhurnal. Matematika, 1959, Nr 9, p 79 (USSR)

AUTHOR: Gerasimchuk, G.M.

TITLE: Integration of Linear Differential Equations With Constant Coefficients
With the Aid of the Integrating factor

PERIODICAL: Nauk.zap.Melitopol'sk.derzh.ped.in-t, 1957, 4, 179-208

ABSTRACT: The method of the integrating factor is applied to linear differential equations with constant coefficients. With the aid of this method the author obtains concrete final formulas in quadratures for the general solution of linear inhomogeneous and homogeneous differential equations of n-th order with constant coefficients. Arbitrary combinations of the multiplicities of the roots of the characteristic equations are admitted. The deduction of the formulas does not depend on the structure of the right sides of the differential equation. The formulas obtained in the article are used for the solution of concrete examples.

Author's summary

X

Card 1/1

PETROV, N.A., red.; PETRENKO, L.I., red.; SAVITSKIY, P.S., red.; HUMYANTSEV, S.V., red. toma; TSEPAYEV, V.A., red. toma; GRUZIN, P.L., red. toma; LEBEDEV, A.K., red. toma; GERASIMCHUK, G.S., red. toma; MIGAY, L.S., vedushchiy red.; SHOROKHOVA, L.I., vedushchiy red.; IONEL', A.G., vedushchiy red.; MUKHINA, E.A., tekhn. red.

[Transactions of the Conference on Radioactive Isotopes and Nuclear Radiation in the National Economy of the U.S.S.R.] Trudy Vsesoyuznogo soveshchaniia po vnedreniiu radioaktivnykh izotopov i iadernykh izlucheni v narodnoe khoziaistvo SSSR. Riga, 1960, v chetyrekh tomakh. Pod red. N.A.Petrova, L.I.Petrenko i P.S.Savitskogo. Moskva, Gos. nauchno-tekhn. izd-vo nef. i gorno-toplivnoi lit-ry. Vol.3. [Machinery industry. Metallurgy] Mashinostroenie. Metallurgiya. 1961. 224 p. (MIRA 14:6)

1. Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheni v narodnom khozyaystve SSSR. Riga, 1960.
(Metal industries) (Radioisotopes--Industrial applications)

S/137/62/000/001/006/237
A060/A101

AUTHORS: Gruzin, P.L., Babikova, Yu.F., Gerasimovich, G.S., Lebedev, A.K.,
Rozhavskiy, G.S. Fedorov, G.B.

TITLE: The present state and future plans for the application of radioactive isotopes and nuclear radiations in metallurgy and mining industry

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 1, 1962, 6, abstract 1V42
(V sb. "Radioakt. izotopy i yadern. izlucheniya v nar. kh-vse SSSR, v. 3", Moscow, Gostoptekhizdat, 1961, 117 - 125)

TEXT: Radioactive isotopes are used at the Kuznetsk, Magnitogorsk, Donetsk, Makeyevka plants, and also at "Azovstal'", the plant imeni Dzerzhinskiy, and others. The most promising directions of research are as follows: 1) the determination of the technological characteristics of steel smelting furnaces; 2) the study and control of the process of metal deformation; 3) the elaboration of special radiometric and activation methods for determining the degree of im-

Card 1/2

The present state and future plans ...

S/137/62/000/001/006/237
A060/A101

purity contamination of metals and semiconductors; 4) the study of the distribution of elements in diffusion microvolumes, of destruction processes, of loss of strength in metals, etc.

N. Yudina

[Abstracter's note: Complete translation]

Card 2/2

GERASIMCHUK, I.S.; LINDVET, B.; SAKS, E.; JOOSTI, H., inzh.
retsenzent; KORROVITS, Kh., kand. tekhn. nauk, red.

[Fibrolite insulating tiles; their properties and use in
building] Teploizolatsionnye fibrolitovye plity; osnov-
nye svoistva i primeneniye v stroitel'stve. Tallinn, Gos.
kon-t Soveta Ministrov ESSR po delam stroit., 1964. 133 p.
(MIRA 17:6)

1. Rabotniki Tallinskogo zavoda nerudnykh materialov
Soveta narodnogo khozyaystva Estonskoy SSR (for Gerasimchuk,
Lindvet, Saks)

23173
S/148760/000/007/013/023/XX
A161/A033

18 3200

AUTHORS: Garger, K. S.; Kuznetsov, M.P.; Ortenberg, R. V.; Gerasimovich,
R. V.; Iyandis, B. V.

TITLE: The burning-out of carbon in the converter process

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya,
no. 7, 1960, 32 - 36

TEXT: A continuous and direct analysis of steel in the converter being still too difficult, the samples are analyzed after tilting. The method is connected with loss of time and impairs the life of converters. In principle, sampling is possible without stopping the blast, and the analysis lasts 5 - 6 min. Therefore the sample must be taken in the first half of the heat (in the 4th minute). The dependence of the carbon content (Z_C) on time must be known to determine the moment when the process is to be stopped. As proven by S. I. Filippov et al. (Ref. 2: Nauchnyye doklady vysshey shkoly, Metallurgiya, 1958, No. 2, 24) component elements burn simultaneously but at a different rate depending on the metal temperature the $Z_C = f(t)$ equation being determined by

Card 1/6

23173
S/148/60/000/007/018/023/XX
A161/A033

The burning-out of carbon in the

these rates. Two types of kinetic carbon burning curves have been found in experiments with a 8 kg laboratory induction furnace (Ref. 1: S. I. Filipov, Teoriya protsessy obezuglerozhivaniya stali (Theory of the steel decarbonization process) Metallurgizdat, 1956) below 1500°C the burning is slower, and above 1500°C in the second half of the heat it is higher and constant:

$$\frac{dZ_C}{dt} = B$$

At Z_C below 0.2 % C, the carbon oxidation rate is inhibited by diffusion. The constant carbon burning rate is taken as the basis of the US patent (Ref. 3: D. Murphy, US Patent No. 2807537, 1957). The purpose of the present work was to find the equation for the carbon burning curves throughout the converter heat (Figure 1) to apply electronic computers for the converter process control. Two heat groups were studied, with sampling at tilts, and by "freezing on". To eliminate the dependence on the iron charge and C content in iron (Z_C^0) a relative value was used instead of Z_C , $\psi = \frac{Z_C}{Z_C^0}$. The time moment value $\varphi = 0.7$ was chosen

Card 2/6

23173
S/148/60/000/007/018/023/XX
A161/A033

The burning-out of carbon in the

for the time unit after a careful analysis. It corresponds to 3.0 - 3.2 % C in the metal bath, when Mn and Si in most cases are already no longer burning. This rated time is designated by τ . The carbon burning equation finally evolved for the case of air blast through bottom (curve 1 in Figure 3) is:

$$Z_C = Z_C^0 \exp(-0.331 \tau^{2.936}). \quad (3)$$

It can apparently be applied to any converter process. The equation for the carbon burning rate ω_C is easily obtained by differentiating the expression (3)

$$\omega_C = \frac{dZ_C}{d\tau} = -0.972 \tau^{1.936} \exp(-0.331 \tau^{2.936}) \quad (4)$$

The burning maximum is at $\tau = 1.265$, and the CO concentration in the separating gas is highest at this moment. The accuracy of the data obtained was checked by the "confidence interval method". Curves 3 and 4 present the results of calculations, with dependabilities 0.90 and 0.80. It was concluded that linear approximation is only applicable for short time intervals. The equation may be presented in the form of nomograms or tables. Computers would calculate the

Card 3/6

23173

S/148/60/000/007/0018/023/XX
A161/A033

The burning-out of carbon in the

moment for the process stop more accurately. A. M. Kublitskiy, V. A. Savchenko and Yu. K. Siryachenko took part in the experiments; some data were obtained collectively with V. I. Yavoytskiy, G. N. Oyks and L. S. Tsykin of the Moskovskiy institut stali (Moscow Steel Institute). M.P. Kuznetsov carried out the first tests with the "freezing-on" sampling method. There are 4 figures and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads: D. Murphy, USA Patent No. 2807537, 1957.

ASSOCIATION: Dneprodzerzhinskiy vecherniy metallurgicheskiy institut (Dneprodzerzhinsk Metallurgical Evening Institute) and Dneprovskiy metallurgicheskiy zavod im. Dzerzhinskogo (Dnepr Metallurgical Plant im. Dzerzhinskiy)

SUBMITTED: March 1, 1960

Card 4/6

GERASIMCHUK, V.A.

Some new data on chain-type conditioned bonds in the cerebral cortex
in children. Trudy Inst.vys.nerv.doiat. Ser.patofiziol. 2:114-128
'56. (MIRA 9:12)

(CONDITIONED RESPONSE)

GERASIMCHUK, V.G. [Herasimchuk, V.H.], naukovyi pratsivnik

Hoe for cultivating soil in orchards. Mekh. sil'. hosp. [9] no.5:22
My '58. (MIRA 11:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i
elektrifikatsii sel'skogo khozyaystva.
(Agricultural implements)

GERASIMCHUK, V.G. [GERASIMCHUK, V.H.], nauchnyy rabotnik; CHEKALOV, A.I.,
nauchnyy rabotnik

Over-all mechanization of work in orchards. Mekh. sil'. hosp. 10
no.3:17-19 Mr '59. (MIRA 12:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektri-
fikatsii sel'skogo khozyaystva.
(Fruit culture) (Agricultural machinery)

VASILENKO, A.A., akademik [deceased]; GERASIMCHIK, V.G., inzh.

Study of the haulm cutting apparatus of beet harvesters with
haulm cutting at the root. Mekh. i elek. sots. sel'khoz. 21
no.4:3-7 '63. (MIRA 16:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i
elektrifikatsii sel'skogo khozyaystva.
(Sugar beets--Harvesting) (Harvesting machinery)

KOVAL', I.I., brigadir traktornoy brigady; GERASIMCHIK, V.G. [Herasymchyk, V.H.], nauchnyy sotrudnik

We introduce over-all mechanization. Mekh. sil'. hosp. 14
no.3:4-7 Mr '63. (MIRA 17:1)

1. Kolkhoz "Komunar", Kagarlitskogo rayona Kiyevskoy obl. (for Koval'). 2. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (for Gerasimchik).

KHOKHLOV, I.I., kand.tekhn.nauk [deceased]; GERASIMCHUK, V.N., inzh.

New method for delinting. Sbor.nauch.-issl.rab.TSNIINHProma
no.9:55-82 '62.
(MIRA 17:4)

GERASIMCHUK, V.V., inzh.

Selecting parameters for the disk-type lifts of beet harvesting combines. Trakt. 1 sel'khoz mash. no. 6:27-29 Je '65. (MIRA 18:7)

1. L'vovskiy sel'skokhozyaystvennyy institut.

DOROFYENKO, G.; GERASIMENKO, A.

"Monosaccharides" by J. Stanek, M. Carny, J. Kocurek, J. Pacak.
Reviewed by G. Dorofeyenko, A. Gerasimenko. Coll. Cz Chem 28 no.1:
276-277 Ja '63.

GERASIMENKO, A. A.

137-1957-12-23522

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 98 (USSR)

AUTHORS: Gratsianov, Yu. A., Gerasimenko, A. A.

TITLE: The Effect of the Smelting Process on the Physical and Technological Properties of Mo-Permalloy (Vliyaniye protsessa vyplavki na fizicheskiye i tekhnologicheskiye svoystva Mo-permalloya)

PERIODICAL: Sb. tr. Tsent. n.-i. inst chernoy metallurgii, 1956, Nr 15, pp 219-258

ABSTRACT: Research was conducted for the purposes of determining an optimal technology for the smelting of precision alloys, as well as to study the effects of smelting conditions on their technological and physical properties. The subjects of the investigation were 40 kg batches which were smelted as follows: 1) Without slag; 2) Under acid slags; 3) Under alkaline slags, accompanied by diffusion reduction. The method of smelting which utilizes basic slags and employs the diffusion reduction of the metal through the slag, produces alloys with good technological and magnetic properties. To obtain alloys of such properties by smelting in an open furnace, the following conditions are essential: the employment of diffusion reduction and the consecutive

Card 1/2

137-1957-12-23522

The Effect of the Smelt. Process (cont.)

precipitation reduction of the metal, and the presence of Mn (0.8 - 1.2 percent), Si (0.2 - 0.7 percent), Mg (0.05 - 0.1 percent), and Ca (0.025 - 0.050 percent). The presence of more than 0.015 percent of S in the alloy produces a sharp decline in magnetic properties, whereas the presence of more than 0.005 percent of Pb impairs the plasticity of the hot alloy but does not affect the magnetic properties. The employment of Be, Ti, Zn, and Al as technological additives impairs the technological and the magnetic properties of the Mo-permalloy. If the metal is poured at a temperature of $1570 \pm 10^\circ$ the billets exhibit a pronounced columnar structure with traces of shrinkage porosity in the area of the junction of two opposite zones. The columnar nature of crystallization, although preserved, is less pronounced when the metal is cast at a temperature of $1510 \pm 10^\circ$. Ingots cast at $1480 \pm 10^\circ$ are well suited for forging. 90 out of 98 smeltings were cast at temperatures between 1540 and 1570° .

G. S.

1. Alloys-Smelting technology
2. Alloys-Physical properties-Effects

Card 2/2

GRATSIANOV, Yu.A.; GHRASIMENKO, A.A.

New magnetically soft iron-nickel-silicon deformable alloys.
Sbor.trud.TSNIICEM no.23:34-46 '60. (MIRA 13:7)
(Iron-nickel-silicon alloys--Magnetic properties)

GHEBASIMENKO, A. A., Cand of Med Sci -- (diss) "The Utilization of Bacteriophage as a
'Marked Scar' in Studying Ways of Spreading and Prophylaxis of Aerogen Virus
Infections," Sverdlovsk, 1959, 14 pp (Sverdlovsk State Medical Institute)
(KL, 8-60, 119)

GERASIMENKO, A. A.

GERASIMENKO, A. A.: "The Clinical Aspects and Treatment of Subdiaphragmal Abscesses." Min Health Ukrainian SSR. Kiev Order of Labor Red Banner Medical Inst imeni Academician A. A. Bogomolets. Kiev, 1956. (Dissertation for the Degree of Candidate in Medical Science)

So: Knizhnaya Letopis', No. 19, 1956.

~~GERASIMENKO, Mst.~~, kandidat meditsinskikh nauk (Kiyev, Mikhaylovskiy per.
d. 4a, kv.16)

Conservative treatment of subdiaphragmal abscesses. Nov.khir.
arkh. no.4:72-73 J1-Ag '57. (MIRA 10:11.)

1. Kafedra gosptal'noy khirurgii I (zav. - prof. N.Ye.Dudko)
Kievskogo meditsinskogo instituta.
(DIAPHRAGM--ABSCCESS) (PUNCTURES)

GERASIMENKO, A.A., kand.med.nauk; OTENKO, N.P.

Intercostal-parasternal puncture approach to the anterior mediastinum.
Vrach.delo no.5:507-510 My '59. (MIRA 12:12)

1. Propedevticheskaya khirurgicheskaya klinika (zav. - dotsent Yu.T.
Komarovskiy) Ternopol'skogo meditsinskogo instituta.
(LOCAL ANESTHESIA)

GERASIMENKO, A.A., kand.med.nauk

Combined novocaine block of the reflexogenic zones of the anterior
mediastinum and the thoracic wall in coronary disease. Vrach. delo
4:128-129 Ap '62. (MIRA 15:5)

1. Kafedra obshchey khirurgii (zav. - dotsent Yu.T.Komorovskiy)
i kafedra propedevтики vnutrennikh bolezney (zav. - dotsent M.G.Masik)
Ternopol'skogo meditsinskogo instituta.
(NOVOCAINE) (REFLEXES) (MEDIASTINUM)
(CORONARY HEART DISEASE)

GERASIMENKO, A.A., kand.med.nauk

Acute gangrenous cholecystitis as a complication following
resection of the stomach. Vest.khir. no.5:93-95 '62.

(MIRA 15:11)

1. Iz propedevticheskoy khirurgicheskoy kliniki (zav. - dotsent
Yu.I. Komarovskiy) Ternopol'skogo meditsinskogo instituta (dir. ...
dotsent P.Ye. Ogiy).

(STOMACH. SURGERY) (GALL BLADDER--NECROSIS)

Measurement of sucrose crystal growth by means of the
elastic quartz filament. A. A. Gerasimenko and P. V.
Golovin. *Ukrain. Khim. Zhur.* 21, 527-9 (1956) (in Russian).
The elastic-quartz-filament method was applied to meas-
ure crystal growth in sucrose solus. The accuracy of the
method is 10^{-4} g. M. Charmandurian

Acad. of Sci., Ukr. SSR, Inst. of Organ Chem. Lab. of Sugary Substances.

GERASIMENKO, A.A.

Pavel Vasil'evich Golovin; on his 70th birthday. Ukr.khim.zhur.
21 no.5:679-681 '55. (MLRA 9:3)
(Golovin, Pavel Vasil'evich, 1885-)

GERASIMENKO, A. A.

USSR/ Chemistry - Carbohydrates

Card 1/1 Pub. 116 - 23/29

Authors : Gerasimenko, A. A., and Golovin, P. V.

Title : Rate of saccharose crystallization in pure sugar solutions determined by means of an elastic quartz filament and by suspension outside of the solution

Periodical : Ukr. khim. zhur. 21/6, 792-796, Dec 1955

Abstract : The rate of saccharose crystallization in pure sugar solutions of different degree of supersaturation was determined at the state of rest of the solutions at 75°. The application of a new elastic quartz filament method for measuring the increase in the saccharose crystal weight is described. Three USSR references (1949-1954). Tables; graph.

Institution : Acad. of Sci., Ukr. SSR, Inst. of Organ. Chem. Lab. of Sugary Substances

Submitted : May 5, 1955

GERASIMENKO, A. A.

USSR/ Chemistry - Carbohydrates

Card 1/1 Pub. 116 - 24/29

Authors : Gerasimenko, A. A., and Golovin, P. V.

Title : Rate of saccharose crystallization in pure sugar solutions at 70, 80 and 90°

Periodical : Ukr. khim. zhur. 21/6, 797-799, Dec 1955

Abstract : Experiments showed that the rate of saccharose crystallization in pure sugar solutions at 70, 80 and 90° increases with the increase in the supersaturation coefficient. A comparison was made between the values of saccharose crystallization rates in pure sugar solutions and it was established that by increasing the temperature by 10° (from 70 to 80°) the rate of crystallization increases by 1.25 times and by 1.3 times when the temperature is increased from 80 to 90°. Three USSR references (1939-1955). Table; graph.

Institution : Acad. of Sci., Ukr. SSR, Inst. of Organ. Chem. Lab. of Sugary Substances

Submitted : May 5, 1955

GERASIMENKO, A.A.

Outstanding scientist and innovator; on the 70th birthday of P.V. Holovin, corresponding member of the Academy of Sciences of the Ukrainian S.S.R. Visnyk AN URSS 26 no.7:38-40 J1'55. (MLRA 8:10)
(Holovin, P.V., 1885)